**The aspects of equity of a publicly funded health insurance in India: The case of RSBY in Chhattisgarh**

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Abstract:

The Rashtriya Swasthya Bima Yojana is a Publicly Funded health insurance Scheme which has been rolled out by the government of India to protect the vulnerable population from catastrophic health expenditure. The scheme has completed ten years currently. So, it is of interest to know whether the scheme met its objectives, how equitable is it with respect to enrolment, utilization. The estimates are based on the data available publicly on the official site of scheme updated by the Government of Chhattisgarh The secondary data for the state of Chhattisgarh in India shows skewed distribution in the number of public and private hospitals empanelled in the scheme district-wise. Also, the number of claims are higher for 'dental diseases' which in contrast to the health needs of the people of the state. Furthermore, few districts show higher utilization rates than others. So, the findings caution the policy-makers to devise methods to cope up with the equity issues in publicly financed health Insurance scheme.

 INTRODUCTION:

"Incidence of catastrophic expenditure due to health care costs is growing and is now being estimated to be one of the major contributors to poverty" as stated by 2015 GOI report.(Ministry of Health & Family Welfare. National Health Policy 2015 Draft. (Government of India, 2014). The latest NSSO survey found Average total medical expenditure for treatment per hospitalisation case during stay at hospital as Rs. 18268. Around 70% India’s population rely on savings/household incomes which is 'out of pocket' expenditure if they are not covered by any Insurance scheme for hospitalization(NSSO 71st Round). When OOP forms the major source of financing the poorer households are not left with any other options to cope up with the expenses except selling their assets or borrowing at an exorbitant rate(Bhandari, Berman, & Ahuja, 2010) while a fourth of the population goes untreated on account of financial constraints (Ghosh, 2014a). In Chhattisgarh the proportion of households facing catastrophic health expenditure is 6.6% below the national average for India (13%) (Health and Morbidity report:India,2016) . So, to cover the eligible population against financial shocks, central government and various state governments came up with publically financed health insurance schemes - RSBY(Central government), CMCHISTN (Tamil Nadu),Vajpaye arogyashri (Andhra Pradesh), RGJAY (Maharashtra), Rajiv arogyashri (Karnataka).PFHIS has brought fundamental changes in public financing and health services provisioning as India traditionally has tax-based financing (Rent and Ghosh S,2015).The publically financed health insurance schemes -(PFHIS) are designed as demand-side financing models by focusing on the split between service provisions and financing, where the financing is left to the state, while healthcare service is provided by both private and public institutions(Shamika Ravi and Sofi Bergkvist,2012). In such a scenario the government's role is reduced to merely a payer while the TPAs/ Insurance companies buys the packages in its lieu(Rent and Ghosh S,2015). Such demand-side financing is based on the philosophy of “money follows the patients” approach, as was outlined by Hsiao (2007). This paper has five section, first section is a brief introduction to the RSBY scheme in India and Chhattisgarh, the next section is deals with the methods and materials used in the study, fourth section is the discussion of the results and the paper concludes by summarizing the findings, limitations and research questions which needs further study.

**RSBY in India and Chhattisgarh:**

RSBY was launched by Ministry of Labour and welfare in 2008, but since 2015 it has been transferred to Ministry of Health and Family Welfare. The scheme provides a coverage of around Rs.30,000/- per family(a maximum of 5 members) per year. Earlier it was meant for only BPL households, the scheme was later extended to cover unorganized sector workers such as construction site workers, street vendors, taxi drivers. The scheme also reimburses or pays for the transport and food expenses. The beneficiaries have to pay Rs.30 as premium while the rest of premium is borne by Central and state government as per their sharing ratio on the basis of competitive bidding. An insurance company is given the contract to settle all the claims for the procedures included under benefit package, while the insurance company outsources another TPA company for enrolment of the eligible population.The state of Chhattisgarh has 40.8% BPL households as of 2011 when the scheme was being rolled out.  It was initially rolled out in only 6 districts of the state and thereafter was expanded to whole of the state of Chhattisgarh, now it covers all 27 districts.  'Mukhyamantri swasthya bima yojana' is the PFHIS rolled out by Chhattisgarh state government in order to cover those left out families not covered under RSBY. The basic objective of both the schemes is to provide financial protection to the vulnerable population and provision of quality healthcare by involvement of expanding private sector. Under both the schemes a cover of Rs.50,000 per year is provided to each family on floater basis (a maximum of 5 family members). The total number of current active smart card holders under RSBY and MSBY scheme combined is**55,81,433.** Both the schemes give the freedom to the patients of choosing from amongst public as well as private providers. One of the study conducted in Chhattisgarh found that there is no gender bias in enrolment (Sun, 2011), while other study found more males enrolled than females as far as decision for enrolment is concerned a boy is more likely to be enrolled in the scheme over a girl in the same family when there is a cap on number of family members to be enrolled (Jain, 2011).

As these demand-side financing models are designed to benefit specific population sub-set, targeting the right group is critical to these schemes. Latest round of NSSO (71st round) highlights the poor coverage of the target population under PFHI schemes, in rural areas the lowest quintile has only 7.7% coverage as compared to 15.1% in the fifth quintile, while in rural areas it is 10.1% in the lowest quintile versus 17% in the fifth quintile (Sundaraman T and Muraleedharan V.R 2015).

Various other studies also point out the problem of inequity/poor-targeting viz under Tamil Nadu Chief Minister's comprehensive claims distribution, the metropolitan areas accounted for 40 percent of all scheme expenditure, while the remaining 60 percent seems to be relatively better distributed with each next 10 districts . Rajiv gandhi jeevandayee arogya yojana includes beneficiaries,out of which half are from non-eligible population (Ghosh and Rent 2015), evidence from Andhra Pradesh shows that more than 80 percent of the population is enrolled under Aarogyasri ( Ravi & Bergkvist 2012). The official report on evaluation of various aspects of RSBY and MSBY in four districts of Chhattisgarh observed - the absence of potential beneficiaries present in the village, did not apply or had long waiting periods as the main reasons for non-enrolment (Centre for Tribal and Rural Development [CTRD], 2013). Only half of the population enrolled in these districts included in study received the smart card on the same day of their application (as per the procedure) rest of the respondents didn't receive on the same day (CTRD report, 2013)

The aim of the study is to assess how the scheme has progressed since its inception in terms of equity among its target population. The main objectives of the study are to estimate and compare the current inter-district variation in enrolment, utilization, hospitalization costs with that in 2011 for the state of Chhattisgarh which are in a way to measure the equity. Also, to observe the distribution of public and private hospitals across the state and how does it change since the scheme's inception.

**METHODS & MATERIALS:**

The district-wise secondary data from January 2017 to September 2017 was obtained from official website of RSBY and state website of RSBY maintained by Chhattisgarh government on the equity aspects- enrolment pattern, claims distribution, number of empanelled hospitals as well as number of hospitalisation. The data were then utilized to estimate the claims ration (procedure-wise as well as district-wise), enrolment pattern, rate of hospitalisation, average costs of hospitalisation across the district and the number of private and public hospitals in each district and the current data was used to compare the change in trends since 2011 when the scheme was rolled out till 2017.

**RESULTS:**

**The share of public and private empanelled hospitals :**

The numbers of private hospitals empanelled at the beginning of the scheme was 207 against 327 public hospitals (nandi et al,2012) which has actually increased manifold since the scheme rolled out. At present, Out of the 1115 empanelled hospitals, the no. of public and private hospitals are 548 and 567 respectively, with the private being little over 50%. Clear criteria for the enrolment of different specialty hospitals as well as the clinical protocols to be followed by each specialties has been spelled out in the scheme's official website. Both enrolment status (77% under RSBY v/s 23% under MSBY) and claims settlement status (66.9% under RSBY, 33% under MSBY) is higher for RSBY than MSBY for the reason that the latter covers for those families not covered under RSBY. Till 2010 BPL population enrolled under RSBY was 46% (Nandi et al,2010). The highest claims ratio is in the districts of raipur and bilaspur around 26% which could be due to crowding of more health facilities in these areas (136 hospitals in bilaspur and 218 hospitals in raipur against 6 health facilities in Sukma) while lowest was 4% in the Sukma district which are difficult to access, having fewer or no private health facilities. However the average claims ratio is around 12%. Also, claims rejection is higher in Bilaspur and Raipur district. The empanelled public hospitals in raipur have fell down from 36 in 2011 to 31 (2018) still number of private hospitals is in rise,187 out 218 hospitals empanelled in the district. This runs contrary to the assumption that private facilities would be covering up for the lack of public health facilities as Raipur which has relatively higher number of public hospitals than many other districts, has still more higher number of private hospitals. Distribution of private hospital as we can see from the table-1 is quite skewed, around 305 of 542 hospitals are located in only two districts. Rajnandgaon, Korba and Balodabazar are the districts which have considerably higher number of public health facilities.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl.no. | District name | Public | Private | Total |
| 1 | Koria | 15 | 4 | 19 |
| 2 | Sarguja | 27 | 17 | 44 |
| 3 | Jashpur | 21 | 3 | 24 |
| 4 | Raigarh | 23 | 14 | 37 |
| 5 | Korba | 38 | 24 | 62 |
| 6 | Janjgir | 22 | 16 | 38 |
| 7 | Bilaspur | **18** | **118** | **136** |
| 8 | Kawardha | 5 | 6 | 11 |
| 9 | Rajnandgaon | 57 | 32 | 89 |
| 10 | Durg | 49 | 39 | 88 |
| 11 | Raipur | **31** | **187** | **218** |
| 12 | Mahasamund | 27 | 13 | 40 |
| 13 | Dhamtari | 27 | 23 | 50 |
| 14 | Kanker | 27 | 8 | 35 |
| 15 | Bastar | 12 | 3 | 15 |
| 16 | Dantewada | 10 | 0 | 10 |
| 17 | Narayanpur | 5 | 2 | 7 |
| 18 | Bijapur | 11 | 0 | 11 |
| 19 | Bemetara | 22 | 1 | 23 |
| 20 | Balod | 10 | 9 | 19 |
| 21 | Mungeli | 4 | 4 | 8 |
| 22 | Balrampur | 33 | 2 | 35 |
| 23 | Surajpur | 8 | 1 | 9 |
| 24 | Balodabazar | 38 | 7 | 45 |
| 25 | Gariyabandh | 22 | 3 | 25 |
| 26 | Kondagaon | 6 | 4 | 10 |
| 27 | Sukma | 5 | 2 | 7 |
|  | TOTAL | 573 | 542 | 1115 |

TABLE-1 No. of empanelled public and private hospitals district -wise

Source: Rashtriya swasthya bina yojana mukhyamantri swasthya bima yojana. Government Chhattisgarh shasan Retrived from http://cg.nic.in/healthrsby/Default.aspx on June 5th 2018.

A study on utilization of the scheme amongst women in rural areas in the districts of Raipur found more than two-third of them utilizing public sector for deliveries, reason being they have been recommended by someone, while for the non-gynecological problems private facilities were the mainstay (Nandi et al,2016). Discrimination has been reported among the RSBY beneficiaries by the doctors in public hospitals who view them as an extra burden while the private sector sees as an extra source of income and hence there is no discrimination of the beneficiaries there (RSBY CTRD report 2013). Most private hospitals fixed a quota for BPL patients, beyond which they refused to admit patients under RSBY, .

**ROUND-WISE ENROLMENT:**

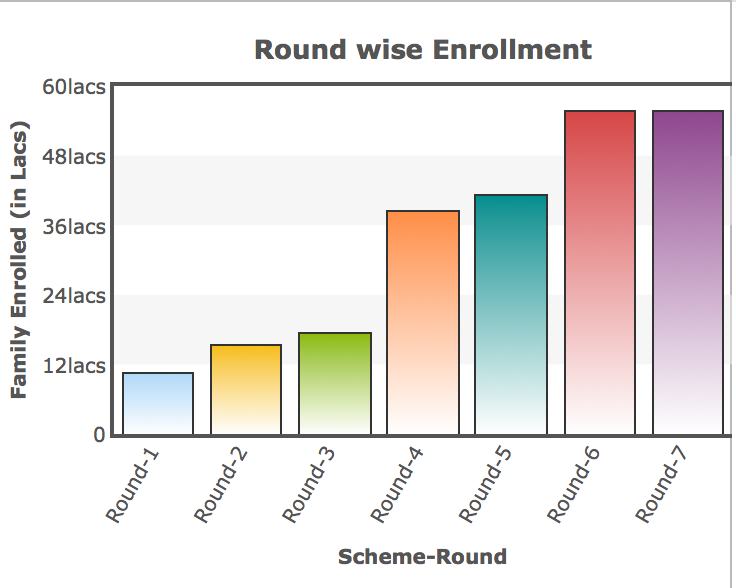


FIG.1 Round wise enrollment

 Source: Rashtriya swasthya bina yojana mukhyamantri swasthya bima yojana. Government  Chhattisgarh shasan Retrived from http://cg.nic.in/healthrsby/Default.aspx on June 5th 2018.

 The no. of families enrolled has increased from 10 lacs in the initial round to 55 lacs currently.

CONVERSION RATE

Based on the latest NSSO survey (71st round) Chhattisgarh has one of the highest proportion of population covered by insurance (around 39.3%) as compared to the national average of 15% just next to Andhra Pradesh (62.8%) (Health and Morbidity report:India,2016). The findings corroborate with the estimates of our study too. We estimate conversion percentage as based on percentage of families enrolled to the total number of eligible or Below Poverty Line families. The number of the eligible families enrolled in the scheme has definitely increased from the initial rounds of enrolment till date. Earlier the rate of enrolment was 42.97% , but has now increased to 82.97%

|  |  |  |
| --- | --- | --- |
| District | Percentage Enrolment At Policy Year-1/2 | Percentage Enrolment At Policy Year -8 |
| Balod | - | 88.96% |
| Balodabazar | - | 82.23% |
| Balrampur | - | 79.34% |
| Bastar | 28% | 77.39% |
| Bemetara | - | 71.71% |
| Bijapur | - | 72.82% |
| Bilaspur | 45% | 91.93% |
| Dantewada | 12% | 85.90% |

|  |  |  |
| --- | --- | --- |
| District | Percentage Enrolment At Policy Year-1/2 | Percentage Enrolment At Policy Year -8 |
| Dhamtari | 65% | 82% |
| Durg | 37% | 79.99% |
| Gariyabandh | - | 83.14% |
| Janjgir | 53% | 90.26% |
| Jashpur | 87% | 93.71% |
| Kanker | 47% | 88.84% |
| Kawardha | 30% | 88.14% |
| Kondagaon | - | 87.34% |
| Korba | 63% | 83.09% |
| Koria | 9% | 83.00% |
| Mahasamund | 52% | 85.13% |
| Mungeli | - | 74.12% |
| Narayanpur | - | 80.85% |
| Raigarh | 58% | 94.06% |
| Raipur | 26% | 88.05% |
| Rajnandgaon | 69% | 89.89% |
| Sarguja | - | 80.66% |
| Sukma | - | 55.47% |
| Surajpur | - | 81.37% |
| Chhattisgarh | **47%** | **82.97%** |

Table-2 PERCENTAGE ENROLMENT (Conversion ratio)

**source:**http://rsby.gov.in/Statewise.aspx?state=13 Retrieved on 6th June

The minimum conversion rate in the districts of Chhattisgath have more than & 70% , while few have as high as 94% of the eligible population enrolled. Though, there has been an increase in the enrolment rate overall, but there exists disparity in enrolment in both rural and urban areas as the findings of one study shows that only 43 per cent of the urban slum population in Raipur city continued to lack coverage (Nandi et al,2016). Therefore, examining the equity aspect of the scheme is necessary .  However, the study didn't find any significant difference in enrolment across gender and social groups.

**Utilization of the scheme:**

If we take hospitalization rates as a proxy for utilization, then definitely there has been an increase in utilization rates since the first round when the scheme commenced. During 2011 when RSBY was still at its nascent stage in many districts of C.G the state average for hospitalization rate was 0.83%(20,403 cases). The initial hospitalization rates was lower, due to the fact that the scheme was started in select districts and the enrollment rates were also lower. Six years later .i.e. in 2017  the hospitalization rate is 2.89% (7,29,562) (Nandi et al,2012) which is highr than initial rates. The highest number of hospitalization rate is observed in Raipur district (14.78%) followed by Bilaspur (9.33%) which also have the highest numbers of empanelled hospitals. The lowest hospitalisation rate is in sukma (0.33%), Bemetara (0.53%) Mungeli (0.70%)  district .

|  |  |  |  |
| --- | --- | --- | --- |
| District | Assuming 5 Members Are In Each Family | No. Of Hospitalization | Percentage Of Hopitalization  (total No.Hospitalizations/total No. Of Enrolled Members) |
| Balod | 607875 | 19720 | 3.24% |
| Balodabazar | 1100840 | 11245 | 1.02% |
| Balrampur | 671290 | 5962 | 0.89% |
| Bastar | 799275 | 9073 | 1.14% |
| Bemetara | 524635 | 2802 | 0.53% |
| Bijapur | 167440 | 4329 | 2.59% |
| Bilaspur | 1840095 | 171726 | **9.33%** |
| Dantewada | 223155 | 3354 | 1.50% |
| Dhamtari | 669275 | 44364 | 6.63% |

|  |  |  |  |
| --- | --- | --- | --- |
| Durg | 887075 | 51612 | 5.82% |
| Gariyabandh | 695745 | 4320 | 0.62% |
| Janjgir | 1627180 | 20146 | 1.24% |
| Jashpur | 828790 | 14045 | 1.69% |
| Kanker | 584115 | 19708 | 3.37% |
| Kawardha | 752795 | 9098 | 1.21% |
| Kondagaon | 469390 | 7082 | 1.51% |
| Korba | 981030 | 21961 | 2.24% |
| Koria | 540335 | 13773 | 2.55% |
| Mahasamund | 1101015 | 22459 | 2.04% |
| Mungeli | 560040 | 3901 | 0.70% |
| Narayanpur | 95765 | 2283 | 2.38% |
| Raigarh | 1471165 | 24451 | 1.66% |
| Raipur | 1156000 | 170802 | **14.78%** |
| Rajnandgaon | 1111535 | 40747 | 3.67% |
| Sarguja | 578500 | 25659 | 4.44% |
| Sukma | 102665 | 334 | 0.33% |
| Surajpur | 584115 | 4606 | 0.79% |
| **Chhattisgarh** |  | **729562** | **2.83%** |

TABLE-3 Utilization of the scheme ( for the policy year 2017)

Source: http://rsby.gov.in/Statewise.aspx?state=13 Retrieved on 6th June 2018

According to a post enrolment evaluation study conducted in 4 districts of  Chhattisgarh, Just one-fourth or less .i.e. 22.8% to 25.6% of the respondents knew about use of the card. And an even smaller proportion .i.e. 7.9% to 11.1% of total cases had knowledge on list of empanelled hospitals (CTRD report, 2012). It was also found that 57% of the interviewed women utlilized public facilities especially for gynecological problems (ibid). A recent study on utilization of the RSBY scheme amongst women in Raipur slums observed that only families of one-third of the women were able to utilize the card, despite of having the highest number of empanelled hospitals (Nandi et al,2016). Also, only less than half of the families of the women interviewed used the smart card, the main reasons cited for such a high number of non-usage of the scheme were either the facility didn't ask for card during admission, the card was not renewed or facility not being empanelled (ibid).

**PROCEDURE-WISE CLAIMS DISTRIBUTION:**

A total of 805 surgical cases are listed under scheme including both which requires admission and day care however few procedures are excluded - Medical procedures which need hospitalization for less than 24 hours, condition that are treated at home, congenital external diseases, drugs and Alcohol Induced Illness, Vaccination, War, Nuclear invasion, Suicide, Naturopathy, Unani, Siddha, Ayurveda.

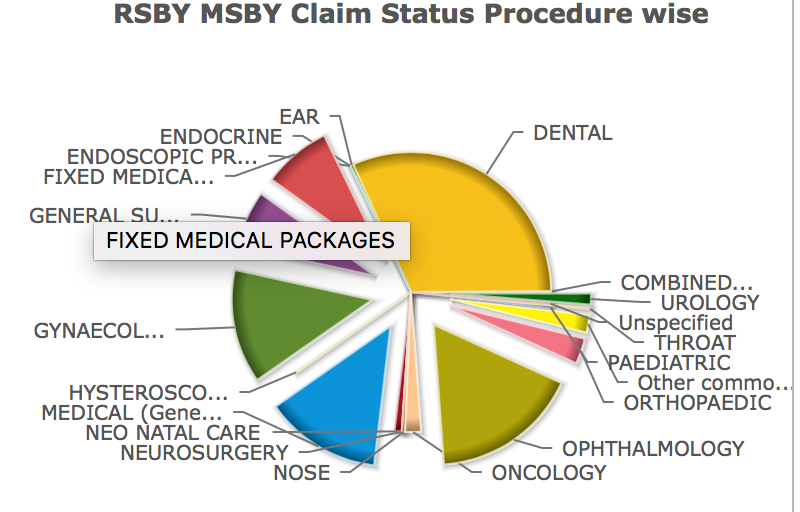


Fig.2 Claims status procedure-wise

Source: Rashtriya swasthya bina yojana mukhyamantri swasthya bima yojana. Government Chhattisgarh shasan Retrieved from http://cg.nic.in/healthrsby/Default.aspx on June 5th 2018.

The above figure shows the procedure-wise break down of claims made till date. The figure clearly implies that the dental procedures outnumber all other procedures in the claims settled, followed by opthalmology, gynaecology and general medicine related claims. Other procedures such as oncology,pediatrics, general surgery, urology, etc. have lesser share in the claims. If the claims settled procedure-wise implies the take up of treatment for health needs, for which the households can't afford treatment then the question arises whether the scheme is addressing the health needs of the patient or is it 'supplier-induced demand' as described by La Forgia and Nagpal (2012). The report on disease burden for Chhattisgarh (ICMR,2015) has found that disease groups responsible for death and disabilities across all age groups are- communicable,maternal, neonatal, and non-communicable diseases . This doesn't comply with the procedure-wise share of claims ratio.

As the institutions are not accredited for specific services, institutions/doctors could pick and choose conditions that have profitable package rates. The doctors also reported largely treating conditions which are simple/uncomplicated . (Dasgupta et al,2013). The explanation for higher proportion of dental treatment in claims distribution could be 'cherry-picking' of cases based on cost-benefit ration, in which simpler cases are picked up by providers than complicated cases which have poor cost-benefit ratios(Normand and weber,1994) which is flip-side of Case-based payments. The evidence was found under 'Vajpayee arogyashree scheme' where complicated cases were referred to public hospitals while they preferentially selected ‘financially remunerative’ cases (Prasad and Raghvendra , 2012).

**COST OF HOSPITALISATION:**

|  |  |
| --- | --- |
| **District** | **Avg.cost of hospitalization (Total cost of hospitalization/ No.of hospitalisations)** |
| Balod | 4598 |
| Balodabazar | 3904 |
| Balrampur | 3451 |
| Bastar | 7231 |
| Bemetara | 3927 |
| Bijapur | 3748 |
| Bilaspur | 3529 |
| Dantewada | 2519 |
| Dhamtari | 6279 |
| Durg | 4972 |
| Gariyabandh | 5225 |
| Janjgir | 5324 |
| Jashpur | 4955 |
| Kanker | 5433 |
| Kawardha | 11109 |
| Kondagaon | 5021 |
| Korba | 4446 |
| Koria | 4886 |
| Mahasamund | 4541 |
| Mungeli | 6075 |
| Narayanpur | 5189 |
| Raigarh | 6936 |
| Raipur | 5414 |
| Rajnandgaon | 3538 |
| Sarguja | 5433 |
| Sukma | 3644 |
| Surajpur | 3419 |
| **Chhattisgarh** | **4850** |
|  |  |

TABLE-4 Average Cost of hospitalisation under scheme ( for the policy year 2017)

Source: http://rsby.gov.in/Statewise.aspx?state=13 Retrieved on 6th June 2018

Average cost of hospitalisation has been estimated by costs of hospitalization in each district by total number of hospitalisations in each district (Nandi et al 2012). The average cost of hospitalization for the state of Chhattisgarh was Rs.4850. Amongst all districts Kawardha reported highest hospitalization costs -Rs. 11,109 and lowest was Dantewada Rs.2519. There is wide variation amongst the highest and lowest, while in the rest of the districts hospitalisatoin rates is around Rs.3000-6000. The average cost of hospitalization estimated in a study for the study of Chhattisgarh was almost similar to current estimate. While in 2011 eight districts had average cost of hospitalization is higher than the state average, at present 11 out of 27 districts have average hospitalization costs higher than the state average.

**DISCUSSION & CONCLUSION:**

The statistics show an overall increase in enrolment, utilization, number of empanelled hospitals in both RSBY and MSBY schemes. The state has seen a higher conversion ratio (.i.e. increased percentage of the BPL households enrolled ) and all the districts seems to do better on an average, only sukma district shows lower enrolment rate amongst all districts (55%) probably due to poor accessibility and political disturbances. Those districts (bilaspur,raipur) which have higher number of public empanelled hospitals has higher utilization percentage too. An interesting finding is that even the districts with relatively higher number of empanelled public hospitals, have higher numbers of empanelled private hospitals too which undermines the overall objective of the scheme .i.e. making services available by Private facilities only when there is dearth of public health facility. A study on RSBY in Chhattisgarh found that 58% of the respondents who used private healthcare services and 17% of those who used government health- care services incurred out-of-pocket expenses (Nandi et al ,2010), which defies the aim of the scheme to make it cashless at point of delivery and to prevent any out of pocket expenditure.

Moreover, 80% of the population depends on exclusively private treatment for outpatient cases but isn't covered under PFHIS, which accounts for higher out of pocket expenditures according to the NSSO 71st round(Health and Morbidity report:India,2016). The inclusion of tertiary procedures, ambulatory services would only increase the costs (La Forgia, 2012) and undermine its sustainability in long-run. The dental diseases don't figure in the top 10 diseases causing disability and mortality across all ages and sex (ICMR report 2017). But, Procedure wise 'dental treatment' has highest claims of all, followed only by opthalmic and gynecological cases, this too defies the purpose of the scheme which entitles them to cover for hospitalization for procedures which the households commonly suffer from and which can result in catastrophic expenditure.Another interesting finding is the number of empanelled hospitals, amongst the 1115 both public and private hospitals are equal in number. But, the districts of Raipur and Bilaspur alone have 56% percent of the total private empanelled hospitals in the state, which is a quite skewed distribution. An official report on utilization under RSBY in Chhattisgarh also, noted that private hospitals have ‘commercialized’ the scheme (CTRD, 2012, p. 150) . This signals that one should be cautious and should not be looking only at the total numbers rather should have see how equal is the distribution of the hospitals. Further study is required to understand the variation in hospitalization rates with respect to private and public facilities. Also, whether the scheme covers for the health needs of the target population or is the scheme eliciting 'supplier-induced' demand are some questions that needs further probing.

**Declarations**

* Ethics approval and consent to participate -Not applicable
* Consent for publication- Not applicable
* Availability of data and material-

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